

Food Adulteration & Our Rights - I



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Faiz Ghar, 6th Lecture, 5th September 2011

Types & Sources of Adulteration

| S# | Type | Objective |
|----|-----------------|-----------------------|
| 1 | Physical | Increasing weight |
| 2 | Chemical | Prolonging shelf life |
| 3 | Microbiological | Due to carelessness |
| 4 | Hygienic | Reducing cost |
| 5 | Packaging | Reducing cost |
| 6 | Economic | Earning extra profit |



Definition of Adulterated Food

A world over trusted organization FDA Act (1938) provides that food is "adulterated" if it bears or contains any one of the following criteria:

- (1) "Poisonous or deleterious substance" which may render it injurious to health;
- (2) Any *added* poisonous or *added* deleterious substance (other than a pesticide residue, food additive, color additive, or new animal drug, which are covered by separate provisions) that is unsafe;
- (3) In whole or in part, of any poisonous or deleterious substance which may render the contents injurious to health; or
- (4) A pesticide chemical residue that is unsafe. (Note: EPA establishes tolerances for pesticide residues in foods, which are enforced by the FDA.)

Definition of Adulterated Food

Food also meets the definition of adulteration if it bears or contains:

- (5) An unsafe food additive;
- (6) An unsafe new animal drug;
- (7) An unsafe color additive;
- (8) In whole or in part, of "any filthy, putrid, or decomposed substance" or is otherwise unfit for food; or
- (9) It has been prepared, packed, or held under unsanitary conditions (insect, rodent, or bird infestation) whereby it may have become contaminated with filth or rendered injurious to health.

Definition of Adulterated Food

Further, food is considered adulterated if:

- (10) It has been irradiated and the irradiation processing was not done in conformity with a regulation permitting irradiation
- (11) It contains a dietary ingredient that presents a significant or unreasonable risk of illness or injury under the conditions of use (for example, foods or dietary supplements containing aristolochic acids, which have been linked to kidney failure);
- (12) A valuable constituent has been omitted in whole or in part or replaced with another substance; damage or inferiority has been concealed in any manner; or a substance has been added to increase the product's bulk or weight, reduce its quality or strength, or make it appear of greater value than it is (this is "economic adulteration"); or

The Federal Meat Inspection Act and the Poultry Products Inspection Act contain similar provisions for meat and poultry products.

Injurious Adulterants in Foods

| S# | Foods | Adulterants | Effects |
|----|--------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1 | Cereals | Straw, husk, mud, stones, grit, marble chips, sand, inferior quality grains, infected or insect infested grains | Damage digestive tract |
| 2 | Pulses | Straw, inferior quality grains, infected grains, yellow dye, sand, filth | Damage digestive tract |
| 3 | Wheat flour & screenings | Grit, infested stock, excess of bran | Damage digestive tract |
| 4 | Milk | Starch, water , milk of other animals, extraction of fats, synthetic milk, detergent, fertilizer, hydrogen peroxide, etc. | Loss of natural conformity |
| 5 | Edible oils | Mineral oil (white oil, petroleum fractions), rancid oil, artificial colors | Loss of Vit. A & E and Cancer |
| 6 | Honey | Sugar syrup, purified molasses | Onset of diabetes |
| 7 | Turmeric & mixed spices | Starch colored with lead chromate or yellow dye | Anemia, abortion, paralysis, brain damage |
| 8 | Coriander | Powdered cow/horse dung, saw dust, starch | Damage digestive tract |
| 9 | Black pepper | Dried papaya seeds | Loss of taste |
| 10 | Chilies | Saw dust, color, dust | Loss of taste |

Injurious Adulterants in Foods

| S# | Foods | Adulterants | Effects |
|----|----------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 11 | Tea | Foreign leaves or exhausted tea leaves, saw dust, husk, artificially colored | Cancer |
| 12 | Fruits, viz. apples | Sprayed with lead arsenate | Dizziness, chills, cramps, paralysis, death |
| 13 | Rat contacts | Rat poison barium carbonate | Violent peristalsis, arterial hypertension, muscular twitching, convulsions, cardiac disturbances |
| 14 | Fruit juices & soft drinks | Contact with cadmium plated vessels / equipment / water / shell-fish | Increased salivation, acute gastritis, liver and kidney damage, prostrate cancer |
| 15 | Water, liquors | (a) Cobalt (b) Lead | Cardiac insufficiency / heart failure Lead poisoning (insomnia, anemia, constipation, mental retardation, brain damage) |
| 16 | Seed grains & fish | Mercury fungicide treatment | Brain damage, paralysis, death |
| 17 | Chinese food, meat | MSG (by) | Brain damage, mental retardation in infants |
| | | Non-permitted color or permitted | Mental retardation, cancer and other |

Summary

- Selection of wholesome and non-adulterated food is essential for daily life to make sure that such foods do not cause any health hazard.
- Although it is not possible to ensure wholesome food only on visual examination because toxic contaminants are present in ppm/ ppb level. However, it ensures absence of insects, visual fungus, foreign matters, etc before purchase.
- Label declaration on packed food is very important for knowing the ingredients and nutritional value. It also helps in checking the freshness of the food and the period of best before use.
- The consumer should avoid taking food from an unhygienic place and food being prepared under unhygienic conditions.
- Consumption of cut fruits being sold in unhygienic conditions should be avoided.

End of Part I

Comments & Questions???

